

Claims

1. A method of routing a terminated call to a subscriber from an Internet Protocol based domain (**IMS**) to a circuit switched domain (**CS**), wherein said Internet Protocol based domain (**IMS**) has call state control functionalities implemented,
said method comprising the steps of
 receiving an invitation (**S1**) of said subscriber for
10 a call by at least one call state control functionality within said Internet Protocol based domain (**IMS**);
 obtaining (**S5**) the profile of said subscriber from said home subscriber serving means (**HSS**) to a call state control functionality (**S-CSCF**);
15 requesting (**S7**) further routing information from said home subscriber serving means (**HSS**);
 requesting (**S9**) a switching means (**VMSC**) within said circuit switched domain (**CS**) currently visited by said subscriber for said roaming number by said home
20 subscriber serving means (**HSS**);
 returning (**S10**) said roaming number of said subscriber to said home subscriber serving means (**HSS**) by said visited switching means (**VMSC**);
 returning (**S12**) said roaming number as said further
25 routing information from said home subscriber serving means (**HSS**) to said call state control functionality (**S-CSCF**); and
 establishing (**S131-S133**) said call via gateway means (**BGCF, MGCF**) for connecting said domains (**IMS, CS**) as
30 well as via said visited switching means (**VMSC**) to said subscriber.
2. A method of routing a terminated call to a subscriber according to claim 1, wherein
35 subsequent to the receipt of said invitation (**S1**), a

step of requesting (**S2**) the location of said subscriber from said home subscriber serving means (**HSS**) is performed; and

subsequent to said return of an indication (**S3**), a 5 step of inviting (**S4**) another call state control functionality (**S-CSCF**) for said call is performed, wherein said other call state control functionality (**S-CSCF**) performs all subsequent steps mentioned in claim 1 as related to said call state control functionality.

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3. A method of routing a terminated call to a subscriber according to claim 1 or 2, wherein an IP multimedia functionality and a subset of home location registering functionality are integrated into said home subscriber 15 serving means (**HSS**), and

said registering request (**S2**), if applicable, and return (**S3**) is performed with said IP multimedia part;

said profile request (**S5**) and download (**S6**) is performed with said IP multimedia part;

20 said roaming number provision requesting step (**S7**) as executed to said home subscriber serving means (**HSS**) is performed with said IP multimedia part;

25 subsequent thereto, a step (**S8**) of requesting said home location registering part for the provision of the roaming number of said subscriber is performed by said IP multimedia part;

said roaming number provision requesting step (**S9**) as executed to said visited switching means is performed with said home location registering part;

30 said roaming number returning step (**S10**) as executed by said visited switching means (**VMSC**) is performed with said home location registering part;

35 subsequent thereto, a step of returning (**S11**) said roaming number from said home location registering part to said IP multimedia part within said home subscriber

serving means (**HSS**) is performed; and

 said roaming number returning step (**S12**) as executed to said serving call state control functionality (**S-CSCF**) is performed by said IP multimedia part.

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4. A method of routing a terminated call to a subscriber according to claim 1, wherein the step of requesting (**S7**) further routing information from said home subscriber serving means (**HSS**) involves the overriding of at least 10 one terminating call related service functionality within said home subscriber serving means (**HSS**).

5. A method of routing a terminated call to a subscriber according to claim 4, wherein the terminating call 15 related service functionality is a supplementary service functionality.

6. A method of routing a terminated call to a subscriber according to claim 4, wherein the terminating call 20 related service functionality is an intelligent network trigger information related functionality.

7. A method of routing a terminated call to a subscriber according to claim 1, wherein

25 said step of requesting (**S7**) further routing information is performed by submitting a Send Routing Information message;

 said step of requesting (**S9**) the provision of the roaming number of said subscriber are performed by 30 submitting a Provide Roaming Number message;

 said step of returning (**S10**) said roaming number of said subscriber is performed by submitting a Provide Roaming Number acknowledgment message; and

35 said step of returning (**S12**) said roaming number as said further routing information is performed by

submitting a Send Routing Information acknowledgment message.

8. A serving call state control functionality device for
5 providing a routing service to a circuit switched domain
(**CS**), said serving call state control functionality
(**S-CSCF**) device providing a functionality of an Internet
Protocol based domain (**IMS**) and comprising means which
are adapted to perform related steps of any one of the
10 methods according to claims 1-5.

9. A home subscriber serving device capable of using
routing information for terminating a call to a
subscriber, comprising

15 an IP multimedia part and a home location
registering part interfaced (**S8, S11**) to each other,
wherein said home location registering part
comprises transceiver means (**S9, S10**) capable of
requesting and receiving roaming numbers from the circuit
20 switched domain.